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INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during February, 1887, based upon the reports of the regular and voluntary observers of the Signal Service, and co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic Ocean during the month are also given, and their approximate paths shown on chart i. In tracing the centres of the paths of these storms, data from the reports of one hundred and eighty-three vessels have been used. The weather over the north Atlantic during the month was very unsettled, and barometric pressure ranging below 29.00 (736.6) was reported on six days.

Icebergs and field ice were encountered in large quantities over the Banks of Newfoundland, and isolated bergs were passed southward to the fortieth parallel, and westward to Sable Island.

On chart i for this month are traced over the United States and Canada the paths of eleven areas of low pressure; the average number for February during the past thirteen years is 11.6. The most severe storms of the month occurred on the 11th, 17–18th, and 26–28th; the effects of the latter depression were felt in the vicinity of the Lakes and New England for over three successive days; it was accompanied by high winds with rain and snow. The storm of the 18th was peculiar, in being attended by very severe thunder-storms, for the season, in parts of New England, the middle Atlantic and west Gulf states, and the upper Mississippi valley.

Light frosts occurred in Florida and the Gulf States on the 28th.

A noteworthy feature in connection with the meteorology of the month is the unusually low temperature that prevailed in Montana and Dakota, the mean for the month in these territories being from 10° to 20° below the normal.

An excess over the average precipitation for February occurred in the greater part of the country.

In the preparation of this REVIEW the following data, received up to March 20, 1887, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and thirty-three Signal Service stations and twenty-one Canadian stations, as telegraphed to this office; one hundred and fifty-nine monthly journals; one hundred and sixty monthly means from Signal Service stations; twenty-one monthly means from Candian stations; two hundred and eighty-seven monthly registers from voluntary observers; fifty-four monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Alabama, Arkansas, Illinois, Indiana, Kansas, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New England, New Jersey, North Carolina, South Carolina, and Tennessee; and of the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The distribution of mean pressure for February, 1887, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

Two areas of high pressure appear on chart ii; the first covers the greater part of Minnesota, Dakota, and Montana, within this area the mean pressure of the month is 30.20 or more; in the extreme northern part of Montana and Dakota it is 30.25. The second area of high pressure extends over the middle and south Atlantic states, where the mean of the month is also 30.20 or more; in the eastern part of North Carolina the high mean of 30.25 is attained. Two areas of comparatively low pressure appear on the chart; the first extends along the coast of Washington Territory, and is shown by the isobar of 29.90; the lowest mean pressure of the month occurs within this area, one station, Tatoosh Island, Washington Territory, giving a mean of 29.89. From this area southeastward the pressure increases rapidly until the isobar of 30.00 is reached at Portland, Oregon. The second low area covers the greater part of the middle plateau, and shows a mean of 29.95 or less.

The departures from the normal pressure are given in the table of miscellaneous meteorological data, and are also shown on chart iv by lines connecting stations of equal departure. The pressure of the month is above the normal over the valleys of the Mississippi and Missouri rivers, and from thence eastward to the Atlantic. In the plateau region of the Rocky Mountains, and along the Pacific coast, it is considerably below the normal. The larger departures in excess of the normal occur in Maine and the Canadian Maritime Provinces, where they range from .11 at Portland, Maine, to .16 at Halifax, Nova Scotia. The pressure is also largely in excess of the normal in the northern part of Minnesota, Dakota, and Montana. The greatest departures below the normal occur in the middle plateau region, the pressure of the month at two stations within this area, Salt Lake City, Utah, and Winnemucca, Nevada, being .18 and .17, respectively, below the normal.

The mean pressure of February, 1887, exceeds that of January, 1887, in all districts of the United States, except in the middle and southern plateau regions of the Rocky Mountains and along the Pacific coast. The increase in the northern districts, especially in Montana, is large; at one station, Fort Assinaboine, Montana, the pressure of February is .28 above that of January. In the upper Mississippi valley, the Lake region, and New England, the increase averages about .18. In Utah, Nevada, Oregon, and northern and central California, the pressure of February is about .15 below that of January.

BAROMETRIC RANGES.

The monthly barometric ranges at the various Signal Service stations are given in the table of miscellaneous data. An examination of the table will show that they are unusually large in all parts of the country, and especially in New England and the middle Atlantic states; this is due to the very high pressure that prevailed on the 3d, 4th, and 5th, and the